VISUALISING HOME TECHNOLOGIES OF THE FUTURE: A REPORT FROM LEICESTER'S DIVERSE COMMUNITIES

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EXTENDED ABSTRACT

Introduction

In a previous ETHICOMP paper (Firth and Flick, 2020), we outlined a proposed method for engaging with those with low digital capital (often associated with low socio-economic status) in order to look at their sociotechnical imaginaries of home technologies of the future. In that paper, we argued that this is important to do because of the dramatic divide between those traditionally involved in developing such technologies, and those who may benefit or be harmed by them. The method proposed an arts-based expressive mechanism that gave "participants to explore and give shape to their ideas and future technologies by collaborating in creating art pieces". In this paper we report back on the findings of this method: the results from art workshops conducted with Leicester families for the Living Innovation (EU H2020) project along with a reflection of the method involved, particularly given the context of COVID-19.

Background

Our original vision for capturing the diverse voices of Leicester was to visit the local community centres in the most deprived parts of the city and run a series of in-person half day art workshops for families with at least one adult and one child. 20% of neighbourhoods in Leicester are among the most deprived 10%, according to the Index of Multiple Deprivation statistics put out by the UK Government (Office of National Statistics, 2019). The locations we chose are considered amongst the most deprived within Leicester, where the university already runs successful local community outreach programmes so we could link in with those. In this way we could benefit from the trust already placed in the local community organisation and use the networks developed to ensure we had as many participants as possible.

However, before we could run the workshops, the COVID-19 pandemic hit and lockdown was put in place in Leicester in March 2020. We quickly modified our approach to be an asynchronous online workshop.

Method

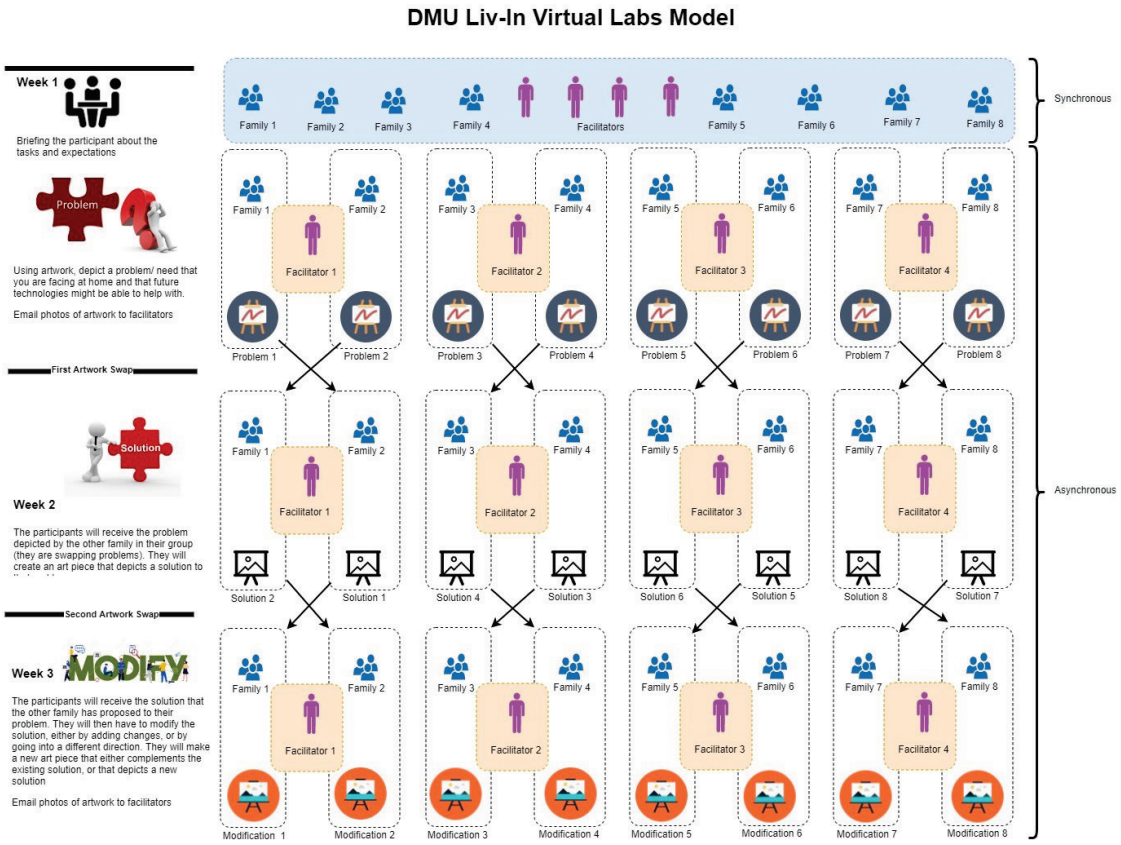
Our key question to participants for the purpose of driving the asynchronous online art workshop was: what problems in your home could be solved by technology of the future? In asking this question, we would be gaining answers to our research questions:

1. What are the visions of future technologies for families of low digital capital?
2. To what extent has the lockdown affected these visions?

Our approach took inspiration from Design Thinking (Brown, 2008) through encouraging our participants to define a problem, then create a solution (to another family's problem), then receiving the solution to their problem back and modify that solution to best fit their needs (or to suggest a new solution to the problem). Each stage was depicted by the creation of an artwork and a short piece of explanatory text. A follow up interview further elaborated the creation of each of the three artworks, who was involved, and the thinking behind it. A local artist was employed to create inspiring videos showing the different stages.

Overall the structure of the artwork stages worked as in Figure 1 below:

Figure 2. Virtual Workshop (Lab) Model



Recruitment

Due to not being able to go into the local communities in Leicester through the local outreach programme, we had to recruit through other means. We tried several methods for recruiting across Leicester more generally: through the local outreach (DMULocal), the artist, who already ran art workshops in those areas, on the local BBC Radio station (BBC Radio Leicester), and a snowball approach through a local mothers' group Whatsapp. By far the most successful recruitment method was through the mothers' group. The organiser of the group runs several local outreach community groups including with disadvantaged families in Leicester, and advertised it amongst her different programmes. Comparably, the 15 minute radio slot resulted in 0 recruited families. In the end, we recruited 12 families with at least one adult and one child age 8 and up, and 2 pilot families – the family of the artist and of one of the co-investigators. Of the recruited families, approximately half of them

lived in the most deprived areas of Leicester. All families were retained throughout the entire programme. Participants received a £40 shopping voucher for their time. Ethics approval was gained through the university ethics committee, with particular focus on protection of children.

Results

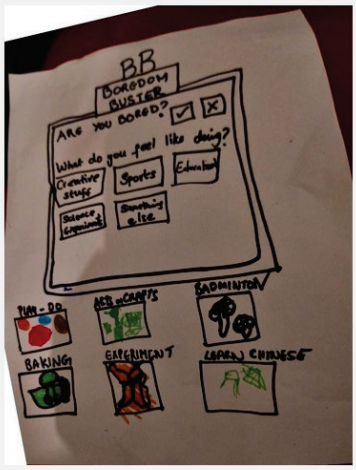
The workshops were conducted over four weeks in July 2020, 4 months into lockdown.

Preliminary results show that lockdown significantly affected the sociotechnical imaginaries of the families involved. Several problems illustrated the concerns the families had with lockdown: mental health, boredom, not being able to leave the house, communication problems. Other problems were more general – mess or insects in the home, sustainability and recycling, home security. Solutions ranged from the extremely practical – spider catchers and bottle recyclers – to the more fantastic, including holographic technology, aerial vacuum cleaners, and flying houses. Surprisingly, many of the solutions already existed as well, apps to track chores, virtual reality, and surveillance cameras, amongst others. Most families modified the solutions sent to them, but others chose to come up with their own ideas. An example of a series of three artworks is found in Figure 2.

Figure 3. A series of three artworks showing the problem, solution, and modified artworks

Problem: Bored during lockdown

Mummy has to work and is busy and the children have no one to play with



Solution: Boredom Buster machine

The Boredom Buster is a machine that asks you to choose the type of activity and then gets the item(s) ready for you to start your activity. If you can't think of something, the machine will choose something for you to do.

Modified: Boredom Buster in a robot

The Boredom Buster was turned into a robot friend who would do the activity or play with you. That way you have someone to talk to as well.

Analysis

Lockdown under coronavirus showed the significant impact that current events can have on influencing imaginaries. This may be linked to the fact that the question was asked of the participants to describe a problem in their home. With the lockdown lingering, and little sign of it letting up in Leicester, families were feeling increasingly confined, bored, and frustrated by the technologies they were using. That many of the solutions depicted virtual reality shows a general knowledge of the existence of virtual reality, but perhaps not any actual experience with it – much of its application in the cases illustrated is likely to be impossible, even in the future. The depiction of currently existing

technology such as surveillance cameras and 3D printers shows that perhaps although these exist they are not yet accessible to families of low socio-economic status. Indeed, many of the technologies depicted exist in some form, though they are extremely expensive. “Future technologies” may instead simply be current, expensive technologies, in a more accessible form.

Further analysis of the results and feasibility has been undertaken through interviews with technologists, futurists, cutting edge technology journalists: this will be taken up in the full paper.

KEYWORDS: Responsible research and innovation, design thinking, diversity and inclusion, innovation, futures research, digital capital.

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